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Conference Report

Proceedings of Mid-Atlantic Gynecologic Oncology Society 2020 Annual meeting

Mid-Atlantic Gynecologic Oncology Society[§]

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The Mid-Atlantic Gynecologic Oncology Society (MAGOS) is a non-profit professional society dedicated to the advancement of gynecologic oncology through a collegial exchange of scientific knowledge. For the past 30 years, the members of MAGOS have worked to provide a collaborative network for gynecologic oncologists and their trainees. The annual meeting serves as an ideal opportunity for faculty, fellows, residents, and medical students to present their research while networking with leaders in the field. These proceedings contain abstracts selected for presentation during the 2020 Annual Meeting, held virtually on 24 October 2020.

SCIENTIFIC SESSION I ABSTRACTS

Presentation 1

Exploring the role of PDE10 inhibition in ovarian cancer carcinogenesis in the egg-laying hen using RNA sequencing

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Objective: Here we investigate our novel phosphodiesterase 10 (PDE10) inhibitor, MCI-030, as a potential chemopreventive or therapeutic agent for epithelial ovarian cancer (EOC). Prior research showed that treatment with MCI-030, a non-cyclooxygenase inhibitory derivative of sulindac, decreased cancer incidence in the egg laying hen

spontaneous model of EOC. This study aims to further understand the molecular pathways affected by MCI-030 in preventing EOC development.

Methods: Hens were treated with MCI-030 or control feed for 6 months. Necropsy was then performed to assess tumor development. We isolated total RNA from ovarian tissue of 8 MCI-030-treated hens (4 tumor, 4 normal) and 8 control hens (4 tumor, 4 normal). RNAseq was performed using paired-end 75 bp sequencing with ~35 million reads coverage using the Illumina NextSeq500 platform. Genes were mapped to the Gallus gallus GRCg6 reference genome. Differential gene expression analysis was performed using DESeq2; pathways were investigated in the Molecular Signatures Database of the GSEA (www.gsea-msigdb.org).

Results: MCI-030 treated tumors had 1,412 significantly downregulated genes (fold-change ≤ -2.0; $P < 0.05$) compared to control tumors, including genes in the Wnt and MAPK signaling pathways. The most significant downregulation was in the cytokine-cytokine receptor interaction gene pathway (67 genes, $P = 3.18$ e-37). Many pathways downregulated by MCI-030, e.g., PDE10A inhibition, corresponded with pathways upregulated in PDE10A high-expressing ovarian tumors in the TCGA (Fig. 1). As expected for typical ovarian tumor expression profiling, various immune and inflammatory pathways were upregulated in ovary tumors compared to normal ovaries of control hens. However, these were strikingly absent when comparing tumors *vs.* normal ovaries of MCI-030 treated hens. The gene expression profiles comparing normal ovaries of treated *vs.* untreated hens revealed only 22 differentially expressed genes.

Conclusion: Our data show multiple gene pathways downregulated in tumors treated with MCI-030 compared to untreated controls, including PDE10A associated pathways such as Wnt and MAPK. Interestingly, many of the MCI-030 downregulated pathways mirror those observed for genes whose expression was positively correlated PDE10A mRNA in ovarian tumors of The Cancer Genome Atlas (TCGA). Our data also suggest that MCI-030 might have minimum effect in normal ovaries, but in contrast ameliorates inflammation usually associated to the tumor microenvironment.

Presentation 2

The novel NSAID-derivative, MCI-030, prevents ovarian cancer in the egg-laying hen by increasing tumor cell apoptosis and decreasing oncogenic signaling pathways

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Objectives: The egg-laying hen is an ideal model to study chemoprevention of epithelial ovarian cancer (EOC) as aging hens have a high rate of spontaneous EOC and similar clinicopathological characteristics of the disease to women. Our previous research revealed that the novel non-COX inhibitory NSAID-derivative, MCI-030, decreased ovarian cancer incidence in the hen. MCI-030 inhibits PDE10A, which was shown in colon and lung cancers to be an effective therapeutic target, reducing β-catenin and pERK oncogenic signaling. Molecular analysis of MCI-030 treated hens was performed to further characterize our observed ovarian cancer risk reduction.

Methods: 225 white leghorn hens aged 2.5 to 3 years old were treated through their feed with MCI-030 or its parent compound, sulindac, for 6- and 12-months and compared to a control group (Fig. 1A). Necropsy was performed at each time point to assess for tumors with 60 hens evaluated at 6-months and 85 at 12-months. Logistic regression with Firth correction to estimate effect size was performed. Ovary and oviduct tissues were harvested and formalin-fixed or flash-frozen then paraffin embedded or homogenized, respectively. Molecular analyses were performed using fluorescent immunohistochemistry, TUNEL assays, and western blotting.

Results: A trend of decreased risk of malignancy was observed in the MCI-030 group at 6- and 12-months versus control with odds ratios (OR) of 0.56 and 0.75, respectively (95% CI 0.121–2.633, 0.22–2.58). In contrast, this trend was not observed for sulindac (6-month OR = 1.56, 95% CI 0.405–6.06, 12-month OR = 0.94, 95% CI 0.29–3.03). Assessment of apoptosis in hen ovaries by TUNEL assay demonstrated that MCI-030 significantly increased apoptosis both overall and in ovarian tumors (Fig. 1B). Western blotting revealed that pERK was significantly decreased in ovaries of sulindac and

MCI-030 hens (Fig. 1C). Immunohistochemistry showed that MCI-030 significantly decreased nuclear translocation of β-catenin and levels of active β-catenin in ovarian tumors (Fig. 1D).

Conclusion: MCI-030 appears to be a promising agent for the chemoprevention and treatment of ovarian cancer. Molecular analysis of its efficacy in hens revealed that MCI-030 increases tumor apoptosis and decreases pERK and β-catenin oncogenic signaling. Further investigation of MCI-030 in additional model systems and in-human trials is warranted.

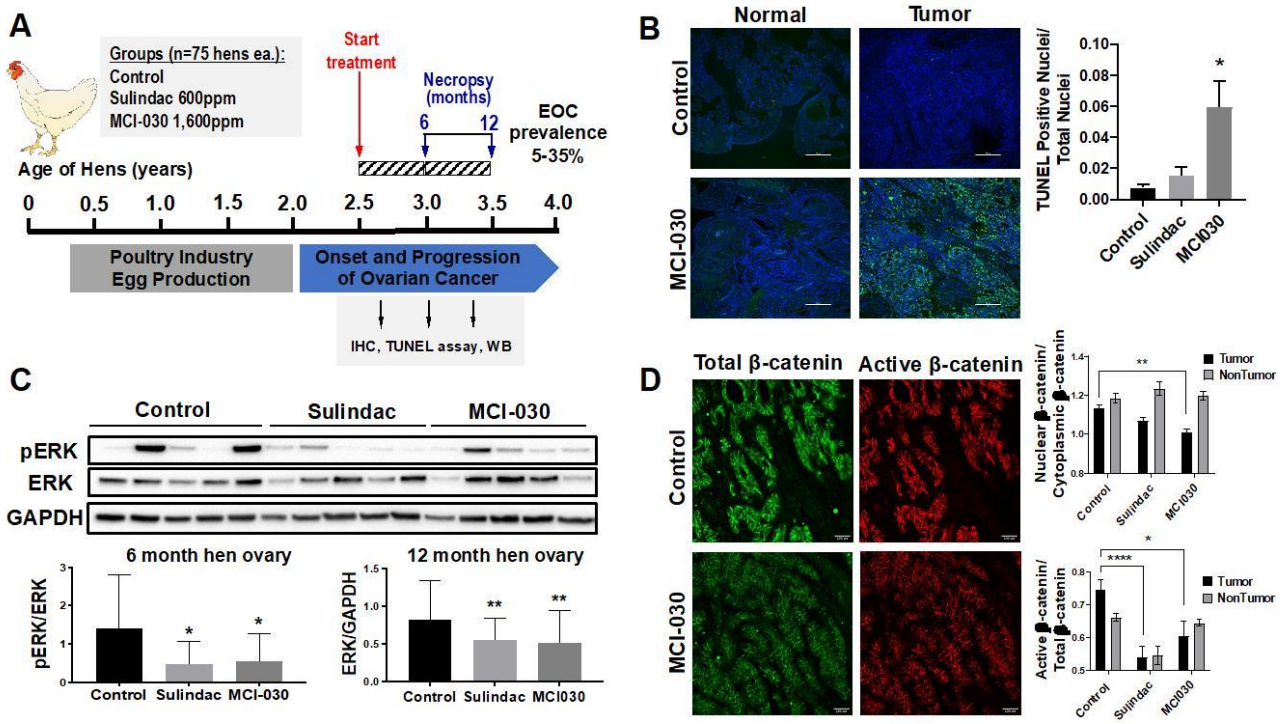

Fig. 1. MCI-030 increases tumor apoptosis and reduces oncogenic signaling in hen EOC. (A) Schematic of research study. (B) TUNEL assays for 6-month hen ovaries with representative microscopy images (blue: DAPI nuclear stain, green: TUNEL positive nuclei) and quantitation of TUNEL positive nuclei within each treatment group. (C) Western blotting of hen ovaries from each treatment group measuring pERK and total ERK protein levels with corresponding quantitations. (D) Florescent immunohistochemistry staining for total β-catenin (green) and non-phospho-β-catenin (e.g., active β-catenin; red) with quantitations comparing nuclear to cytoplasmic total β-catenin (top panel) and active β-catenin (bottom panel) within normal and tumor ovaries of each group.

Presentation 3

Identification and utilization of solid tumor genomic sequencing in the treatment of ovarian and endometrial cancer

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Objectives: We aimed to identify clinically-relevant genetic mutations (CRGMs) in ovarian (OV), fallopian tube (FT), primary peritoneal (PP), and endometrial (EC) cancer patients and investigate the impact of targeted therapy (TT).

Methods: EMERSE was utilized to identify patients diagnosed with OV, FT, PP, and EC who underwent tumor genomic profiling at our institution between April 2014–January 2019. All patients who underwent testing with verifiable results were included in our retrospective cohort. Patients were excluded if they had synchronous cancers and germline or non-solid tumor testing only. Clinical information was abstracted from the medical record. Descriptive statistics were performed.

Results: 513 patients were included (n = 226 OV/FT/PP, n = 287 EC). In the OV/FT/PP cohort, the majority of

patients had high-grade serous (HGS) histology (63.7%) and stage IIIc (47.8%) disease. 53.9% (n = 111) of patients had at least one CRGM. When comparing those who received TT versus those who did not, there was no difference in histology or stage. BRCA1/2 mutations were the most common CRGM (26.6%, n = 32). 25 patients (20.8%) were treated with TT or enrolled in clinical trials (CTs) based on sequencing results. In patients receiving TT, 12.5% (n = 3) had complete response (CR), 8.3% (n = 2) had partial response (PR), and 20.8% (n = 4) had stable disease (SD) for an objective response rate (ORR) of 20.0% and clinical benefit rate (CBR) of 41.7%.

In patients with EC, the majority of patients were endometrioid histology (63.4%) and stage IA (48.1%) disease. 76.7% (n = 211) of patients had at least one CRGM. When comparing TT-patients versus non-TT patients, there was a trend toward patients receiving TT to have non-endometrioid histology (62.7% vs 52.4%, $P = 0.43$) and stage II-IV disease (71.4% vs 51.9%, $P = 0.13$). PTEN mutations were the most common CRGM (48.4%, n = 133). 3.6% and 4.8% of tumors with CRGMs were MSI-H and PD-1 high, respectively. 21 patients (10%) were treated with TTs or enrolled in CTs based on sequencing results. Of these patients, 4.8% (n = 1) had CR, 19% (n = 4) had PR, and 9.5% (n = 2) had SD for an ORR of 23.8% and CBR of 33.3%.

Conclusions: Genomic sequencing detected a high rate of CRGMs associated with gynecologic tumors, enabling treatment with targeted therapies with high clinical benefit. Continued evaluation of CRGMs may prompt investigation of new targeted therapies.

Presentation 4

PARP-Inhibitors may be cost-effective in patients with progression free intervals > 12 months: a cost-effective analysis

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Objective: The role PARP inhibitors in the setting of treatment for platinum sensitive recurrent ovarian cancer continues to be controversial when other effective and less costly chemotherapy regimens are available. The aim of this study is to compare the cost-effectiveness of PARP inhibitors versus non-platinum based chemotherapy for treatment of platinum sensitive recurrent cancer, with a focus on response based on progression free interval (PFI).

Methods: A decision analytic cost-effectiveness model was designed from a hospital perspective to compare treatment for platinum sensitive recurrent ovarian cancer: (1) PARP-inhibitor, (2) Nonplatinum based chemotherapy. Clinical parameters and utilities were abstracted from the literature. Treatment costs were abstracted from the literature and cost databases. Imaging, administrative, and laboratory costs were obtained from Medicare data. The cost of nonplatinum treatment was calculated as a weighted average of nonplatinum medications, including pegylated liposomal doxyrubicin, paclitaxel, topotecan, and gemcitabine. Costs to the hospital included chemotherapy, imaging, labs, and labor costs. Effectiveness was quantified as quality adjusted life years (QALYs). Additional analyses comparing the strategies with respect to PFI (6–12 months, 12 months) were performed.

Results: The base case cost of each strategy were: nonplatinum chemotherapy $66,677 and Olaparib $201,709. Nonplatinum chemotherapy had an effectiveness of 0.89 QALYs, and Olaparib had an effectiveness of 1.15 QALYs. Olaparib was more costly but more effective, with an ICER of $455,747 per QALYs gained compared to nonplatinum chemotherapy. In a subset analysis of patients with PFI 6–12 months, Olaparib had an increased effectiveness of 0.2 QALYS compared to nonplatinum chemotherapy, and had an ICER of $621,039 per QALYs gained compared to nonplatinum chemotherapy. For patients with a PFI > 12 months, Olaparib had an increased effectiveness of 0.48 QALYs compared to nonplatinum chemotherapy, and had an ICER of $327,056 per QALYs gained compared to nonplatinum chemotherapy.

Conclusion: While Olaparib may be considered cost-prohibitive, there may be a role for Olaparib in patients with PFI > 12 months. This study demonstrates an improvement in effectiveness and ICER in patients with PFI > 12 months compared to PFI 6–12 months.

SCIENTIFIC SESSION II ABSTRACTS

Presentation 5

Comparative survival outcomes among high risk endometrial cancers

Haley Zarrin[1,*], Emily Ko[2], Ashley Haggerty[2], Nawar Latif[2], Sarah Kim[2], Lori Cory[2], Mark Morgan[2], Robert Giuntoli[2]

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Objectives: High risk endometrial cancers (HREC) account for only 33% of all endometrial cancers in the United States, but 74% of deaths. As the clinical behavior of HREC in general and for the specific histologic subtypes in particular is uncertain, treatment guidelines for these tumors are not well defined. The objective of this study was to compare survival outcomes in patients with HREC as determined by expert pathology review.

Methods: Data from a retrospective chart review (4/1/2011–12/31/2019) was used to compare survival across patients with different HREC diagnoses. Overall survival was defined as the days between new patient visit and patient death or most recent contact with Penn Medicine. Kaplan-Meier curves and log rank tests were used to determine survival differences across study groups.

Results: 294 patients with HREC were identified. Mean age was 65.8 (35–92). 60.5% of patients were white, 34.0% Black, and 5.4% other/unknown. 42.2% of patients had grade 3 endometrioid cancer (G3EC), 31.0% had serous carcinoma (SC), 5.1% had clear cell (CC), and 21.8% had other high risk histologies. 62.6% had stage I cancer, 7.5% stage II, 24.5% stage III, and 5.1% stage IV. Median survival for G3EC was 2.7 years, 2.6 years for SC, and 1.6 years for CC diagnoses. Stage I cancers had a median survival of 2.8 years, 3.0 years for stage II, 2.2 years for stage III, and 1.8 years for stage IV. When comparing overall survival in stage I patients, there was no significant difference between G3EC, SC, and CC subtypes. When comparing overall survival of stage III patients, a significant difference was found between G3EC, CC, and SC (see Fig. 1; $P = 0.037$). There were no survival differences between non-Hispanic white and Black patients across stages for HREC.

Conclusion: HREC are more lethal than low grade tumors. Stage III CC tumors have significantly worse overall survival than the other two histologic types. Otherwise, there was no clear difference in outcome between the histologies or between white and Black patients. Further exploration of the clinical course of these patients and molecular characteristics of their tumors may provide insight into the reasons for this difference.

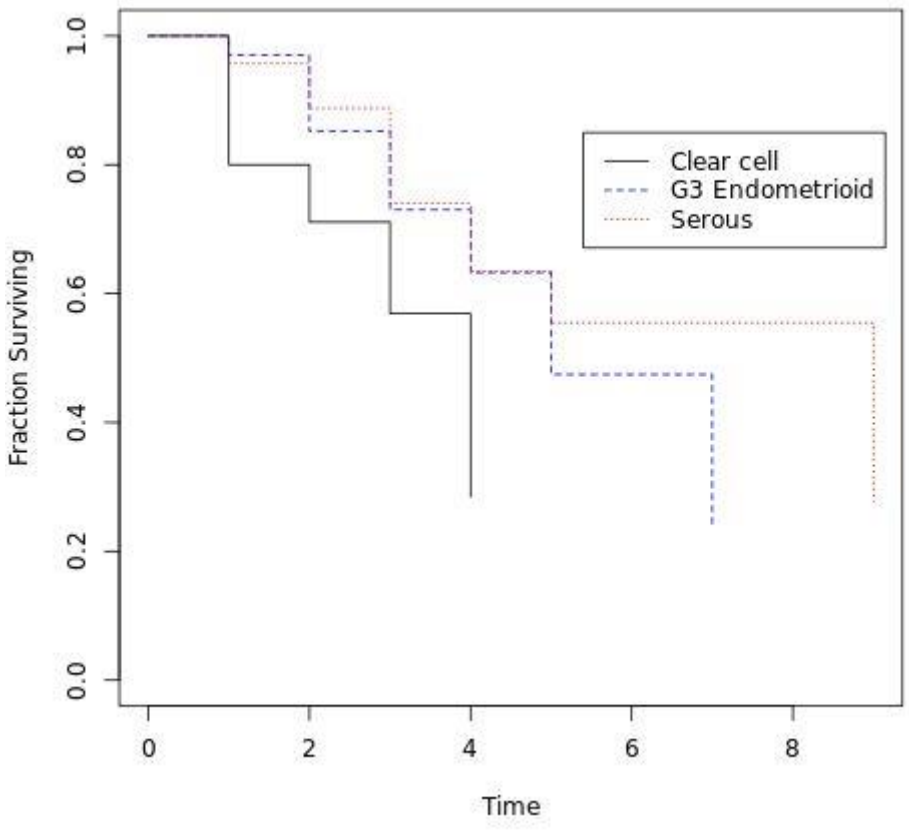

Fig. 1. Overall Survival in Stage III (P = 0.037). Kaplan-Meier curve for stage III tumors by histologic subtype demonstrating worse survival among patients with clear cell tumors as compared to grade 3 endometrioid and serous histologies.

Presentation 6

Race in endometrial cancer: evaluating overall and cancer specific survival

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Objectives: To compare the overall survival (OS) and cancer specific survival (CSS) by race for women with stage I–III endometrial cancer (EC) by histologic subtype.

Methods: This is a retrospective cohort study of women with stage I–III endometrioid, serous, clear cell, and carcinosarcoma who underwent hysterectomy as primary surgical staging as identified within the SEER-Medicare database. EC cases diagnosed between 2000 and 2015 with Medicare enrollment data from 1999–2016 were included. Demographics, cancer data, and survival outcomes were collected and compared using descriptive analyses. OS and CSS outcomes were stratified by race, stage, and histology, then analyzed using log-rank tests and multivariate cox modeling.

Results: 24,142 total patients were included in this dataset. 85.5% were white, and 8.5% were black. 19,351 stage I, 1484 stage II, and 3307 stage III cases were identified. Receipt of adjuvant therapy differed only for stage III endometrioid carcinoma where black women were less likely to receive adjuvant treatment (61.2% vs. 70.1%, p = 0.03). For stage I, black patients had worse CSS and OS for all histologies except clear cell in unadjusted and adjusted analyses (Table 1). For stage II, only CSS for endometrioid differed by race in unadjusted analyses, whereas OS did not. For stage III, black patients with endometrioid carcinoma had worse CSS and OS in unadjusted analyses, but significant survival differences only remained for CSS in the adjusted model.

Conclusion: Prior studies have reported that black women with endometrial cancer have worse survival consistently across stage and histology. However, we did not consistently find this effect when evaluating by CSS and OS. For stage I, black women had consistently worse CSS likely related to the disease itself and worse OS in adjusted analyses likely related to poorer overall health outcomes across all histologic subtypes except for clear cell. For stage II and III, racial disparities were seen only for CSS in endometrioid patients in the adjusted analyses, but not OS; and this may have been related to black women with stage III cancer receiving less adjuvant therapy. Overall these findings emphasize the need to focus interventions in the early stage population, where a disparity exists and the largest population of women is affected.

Presentation 7

Ipatasertib, an oral AKT inhibitor, effectively inhibits cell proliferation and migration, and induces apoptosis in endometrioid and serous endometrial cancer cell lines *in vitro* (*Endometrial Cancer Molecularly Targeted Therapy Consortium*)

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Objectives: Ipatasertib (IPAT) is an orally administered, selective protein kinase B (AKT) inhibitor shown to improve outcomes in metastatic prostate and triple negative breast cancer patients. Because its target pathway is implicated in tumors harboring PTEN mutations, endometrial cancer (EC) is an apt candidate for investigation. Our study evaluated the anti-proliferative efficacy of IPAT in endometrioid and serous EC cell lines.

Methods: Human endometrioid (ECC-1, HEC-1) and serous (ARK-1, SPEC-2) EC cell lines were exposed to varying concentrations of IPAT. Cell proliferation was assessed by MTT and colony assays. Cell cycle progression was measured by

Cellometer. Apoptosis was assessed by cleaved caspase-3 assay and Annexin V assay. Reactive oxygen species (ROS) were measured by DCFDA assay. Cell adhesion and wound healing assays were used to evaluate impact on cell migration and invasion in serous EC cell lines. Western immunoblotting determined effects on BCL-1, MCL-1, Bip, PERK, CDK4, CDK6, E-cadherin and N-cadherin

Results: IPAT inhibited cellular proliferation in a dose dependent fashion in all cell lines after 72 hours of treatment. The median IC_{50} was 1 μM in the ECC-1 and HEC-1 lines, and 5 μM in the SPEC-2 and ARK1 lines. IPAT significantly induced the activity of cleaved caspase 3 and reduced the expression of MCL-1 and BCL-2. IPAT inhibited cell cycle progression by arrest in G1 phase in all cell lines after 36 hours of treatment. DCFDA assay analysis demonstrated that IPAT induced ROS products by 18% and 19% ($P < 0.01$) in the ECC-1 and HEC-1 cell lines respectively, and increased Bip and PERK expression. Additionally, treatment of IPAT reduced cell adhesion by 15% and 17% ($P < 0.01$) in the SPEC-2 and ARK-1 cell lines respectively, accompanied by an increase in N-cadherin and a decrease in E-cadherin.

Conclusions: IPAT significantly suppresses cellular proliferation through inducing cell cycle G1 arrest, cellular stress, and apoptosis in endometrioid and serous EC cell lines. Studies in transgenic and orthotopic EC mouse models are underway to assess the *in vivo* efficacy of IPAT.

Presentation 8

Prognostic significance of histologic squamous metaplasia and immunohistochemical staining patterns of β-catenin and p53 in biopsy-proven endometrial intraepithelial neoplasia

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Background: Endometrial intraepithelial neoplasia (EIN) is a monoclonal proliferation of endometrial glands that can progress to endometrial carcinoma (EC). Squamous metaplasia (SM) is a common morphologic feature of EIN associated with β-catenin protein alterations. Patients with high-risk endometrial cancer (copy-number high) have frequent *TP53* gene mutations and worse outcomes. This study evaluates the prognostic significance of SM, β-catenin, and p53 expression in EIN.

Methods: This retrospective study included patients with biopsy-proven EIN, subsequent hysterectomy, and evaluable tissue. Hematoxylin and Eosin (H&E) slides were reviewed to characterize SM; β-catenin and p53 expression were evaluated by immunohistochemistry (IHC).

Results: 88 cases met inclusion criteria. On biopsy specimen, 11.4% (10/88) of patients had associated SM, and 2.3% (2/88) had abnormal p53 staining. 80% (8/10) of patients with SM had positive staining for β-catenin verses 2.6% (2/78) of patients lacking SM ($P < 0.001$) (Fig. 1). 34.1% (30/88) of patients were diagnosed with EC on subsequent hysterectomy. SM, β-catenin, and p53 expression on biopsy specimen were not correlated with a finding of neoplasia on subsequent hysterectomy (EC or EIN) ($P = 0.427$, $P = 0.104$, and $P = 0.583$, respectively).

Conclusions: Our findings confirm the association between SM and β-catenin abnormalities. Although rare, abnormal p53 IHC in EIN is concerning and may represent a precursor to copy-number high EC. Although these findings demonstrate molecular abnormalities within EIN, β-catenin and p53 expression do not reliably predict cancer diagnosis on final hysterectomy specimen.

SCIENTIFIC SESSION III ABSTRACTS

Presentation 9

Minimally invasive radical hysterectomy for cervical cancer: a systematic review and meta-analysis

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Objective: Recent studies have identified higher recurrence and lower survival with a minimally invasive approach (MIS) versus open abdominal (XL) approach of radical hysterectomy for early stage cervical cancer. We aim to compare recurrence rate, progression-free survival (PFS), and overall survival (OS) for cervical cancer after MIS versus XL radical hysterectomy in a meta-analysis.

Methods: We conducted a systematic review and meta-analysis of cohort studies and randomized control trials from 1990 to 2020 that compared MIS to XL for treatment of early stage cervical cancer (PROSPERO 2020 CRD42020173600). Clinicopathologic variables were analyzed in addition to laparoscopic or robotic approach, overall survival (OS), progression-free survival (PFS), and recurrence rate. We conducted a random-effects meta-analysis with inverse-probability weighting.

Results: 50 studies met inclusion criteria on 40 cohorts and 1 RCT, which included 22,594 unique women with cervical cancer, of whom 10,686 underwent MIS (58.4% laparoscopic, 41.6 robotic). The overall pooled recurrence rate was 8.6%. The risk of recurrence was marginally higher in women undergoing MIS compared to XL, RR 1.01 (95% CI 0.84–1.12, 30 studies). For studies reporting hazard ratios (HR) for PFS and with follow-up of 36 months or more, the odds of recurrence were significantly higher among women undergoing MIS compared to XL, OR 1.40 (95% CI 1.09–1.70, 10 studies); however, when limited to studies without follow-up data, PFS was non-significantly higher among MIS compared to XL, OR 1.25 (95% CI 0.98–1.52, 13 studies). There was no significant difference in OS between MIS compared to XL, OR 0.82 (95% CI 0.58–1.06, $P < 0.001$, 14 studies), even when accounting for at least 36 months of follow-up, OR 0.91 (95% CI 0.62–1.21, 10 studies).

Conclusion: Our dual meta-analysis methods suggest that MIS radical hysterectomy was associated with increased risk of recurrence compared to XL for early cervical cancer. Overall survival did not differ significantly between MIS and open radical hysterectomy.

Presentation 10

Redefining readmissions in gynecologic cancer: readmissions resulting in hospital-to-hospice transitions may represent high value care

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Objectives: Hospital readmissions are used as a marker of quality of care, with unplanned readmissions identified as low value care. The primary objective of this study was to describe readmissions that resulted in discharge to hospice.

Methods: We performed a retrospective cohort study of women with a diagnosis of a gynecologic cancer who were readmitted to a single urban academic hospital within 30 days of their index, or first, admission during the time period between July 2017 through April 2020. Patient demographics, oncology data, admission costs, discharge status, length of admission and length of hospice admission were collected from the electronic medical record. A length of hospice admission ≥3 days was defined as high value palliative care. Descriptive statistics were performed to identify factors associated with discharge to hospice.

Results: We identified 98 patients readmitted during the study period. 36.7% (n = 36) had uterine cancer, 49.0% (n = 48) had ovarian cancer, 12.2% (n = 12) had cervical cancer and 2.0% (n = 2) had vulvar cancer, of which 47% had recurrent disease. 11.2% (n = 11) of patients readmitted had a previous outpatient palliative care consult prior to the index admission and 28.6% (n = 28) had an inpatient palliative care consult during the index admission. Patients were readmitted from home (n = 50, 51.0%), ambulatory visit (n = 31, 31.6%) or a hospital transfer (n = 17, 17.3%). The median time to readmission was 10 days (IQR 5–16 days) and the length of readmission was 5 days (IQR 3–9 days). 23.5% (n = 23) of patients had multiple readmissions, with a median of 2 (range 2–4). One-third of patients (n = 36, 36.7%) received a palliative care consult and hospice was discussed with 21.4% (n = 21) during readmission. 17.3% of patients (n = 17) were discharged to hospice from a

hospital readmission, with a median length of hospice admission of 7 days (IQR 2–14 days). 52.9% of patients (n = 9) had a length of hospice admission ≥7 days. There was a significant association of repeat readmission and enrollment in hospice ($P < 0.05$). The median hospital costs for patients discharged to hospice were $8431 versus $9835 for patients discharged home ($P = 0.8$).

Conclusion: Hospital readmissions in gynecologic cancer patients resulted in a hospital-to-hospice transition in 17.3% of patients. Multiple readmissions may precipitate a decision to enroll in hospice. All readmissions may not indicate substandard care and instead potentially demonstrate higher value care delivered to patients, as both enrollment in hospice at end of life and hospice enrollment for ≥7 days are considered optimal quality oncology metrics.

Presentation 11

The subjective interpretation of negative trial results during oral plenary presentations

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Objectives: Oral presentations of phase 3 randomized controlled trials (RCTs) at oncology meetings often do not undergo peer review; this may lead to conclusions that do not reflect the primary results of the study. For example, the presentation may include a positive conclusion despite a negative trial result. Presentations at medical society meetings may have significant impact on the oncology community. The purpose of this study is to quantify and categorize not-negative conclusions made in oral plenary presentations of phase 3 RCTs for gynecologic malignancies.

Methods: Abstracts related to oral presentations of phase 3 RCTs at the Society of Gynecologic Oncology's Annual Meetings on Women's Cancer between 2005–2020 were reviewed. Studies with a primary endpoint of overall survival (OS) or progression free survival (PFS) and with a formally negative primary endpoint were included. Abstract conclusion sentences were classified as negative or not-negative. Trials with formally negative results were categorized based on the type of not-negative conclusions: (1) positive subgroup emphasis, (2) positive secondary endpoint emphasis, (3) emphasis on better numerical outcome despite nonsignificant *P*-value, (4) noninferiority interpretation of negative superiority trial. Studies with negative results and not-negative conclusions were compared to respective published manuscripts if available. The results and conclusion from the manuscript were compared to quantify and categorize not-negative conclusions.

Results: Oral presentations of 61 phase 3 RCTs met inclusion criteria. Of these, 22 had a formally negative primary PFS or OS endpoint, of which 6/22 (27%) presented a not-negative conclusion. There was a higher proportion of not-negative conclusions among negative trials in more recent years, with 50% (5/10) of abstracts from 2015–2020 including not-negative conclusions, versus just 8.3% (1/12) in studies from the preceding decade 2005–2014 ($P = 0.03$). Authors emphasized a positive subgroup in 4/6 studies and a positive secondary endpoint in 1/6 studies. A numerically better outcome in the experimental arm was highlighted in 2/6 studies despite a nonsignificant *P*-value, and 1/6 studies made a non-inferiority interpretation of a negative superiority trial. Of 21 studies with formally negative results, 56% (5/9) for-profit studies had not-negative conclusions, whereas 8.3% (1/12) non-profit studies had not negative conclusions ($P = 0.02$). Published manuscripts were available for 3/6 not-negative studies, all similarly incorporating not-negative conclusions despite negative results.

Conclusions: Since 2005, 27% of RCTs presented at SGO made not-negative conclusions despite formally negative results, with a majority emphasizing a positive subgroup and funded by for-profit organizations. These results further emphasize the importance of presenters' accurate portrayal of results and attendees' attention to bias during presentations.

POSTERS

POSTER 1

Neoadjuvant chemotherapy and interval debulking surgery in patients over 65: how do our older patients fare?

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Objectives: Elderly patients with cancer frequently receive suboptimal treatment both medically and surgically. However, adoption of of neoaduvant chemotherapy (NACT) for ovarian cancer (OC) has allowed more medically complex patients to receive life-prolonging cytoreductive surgery (CRS). Appropriate balance between chemotherapy and CRS is poorly understood in elderly patients with advanced OC. Our aim was to compare surgical approach, rates of optimal cytoreduction, and progression free and overall survival (PFS and OS) between women <65 and ≥65 years receiving NACT and interval CRS.

Methods: Retrospective chart review was used to collect the study cohort from January 2000 to June 2018 at a single institution. Demographics, neoadjuvant therapies, and surgical variables were abstracted. Interval Fagotti Score was noted for those patients who underwent diagnostic laparoscopy. Otherwise, score was extrapolated from noted surgical findings. Descriptive statistics, student's *T*-tests, and chi-squared tests were used to summarize and compare clinical variables. Progression-free survival and overall survival were analyzed on a Kaplan-Meier estimator using the log-rank method. Statistical significance was set at $P = 0.05$.

Results: Ninety-four patients were included in the cohort: 44% presenting with stage IIIC disease and 56% presenting with stage IV. When divided by age, 54% were <65 and 46% were ≥65 years. Mean cycles of NACT was 4.2 in both groups, and median Fagotti score was 2 for both groups. Younger age was associated with higher rates of laparotomy, 59% vs 47% ($P = 0.2$) and R2 resection, 14% vs 2% ($P = 0.1$). Eighty percent of the cohort recurred during the study period. Median PFS was 17 months for patients <65 and 15 months in patients ≥65 ($P = 0.2$). Median OS was 37.3 months and 31.6 months ($P = 0.5$) in younger and older groups respectively.

Conclusions: While not statistically significant, there is a trend toward decreased PFS and OS among elderly patients receiving NACT and interval CRS for advanced OC. Patients in both groups received >3 cycles of NACT, however fewer elderly patients underwent laparotomy. This study is limited by its small sample size. A larger cohort study is ongoing to determine the role of interval CRS and associated outcomes in elderly patients with advanced OC.

	Age < 65 (n = 51)	Age > 65 (n = 43)	*P*-value
Approach			0.2
Robot	21	23	
Open	30	20	
SCS (Surgical Complexity Score) (mean)	2.4	2.5	0.7
SCS (Surgical Complexity Score) (median)	2	2	0.7
Extrapolated Fagotti Score (mean)	2.9	3.0	0.8
Extrapolated Fagotti Score (median)	2	2	0.8
Cytoreduction			0.1
R0	28	25	
R1	16	17	
R2	7	1	
Cytoreduction			0.8
R0	28	25	
R1/R2	23	18	
NACT cycles (mean)	4.2	4.2	0.9
AC cycles (mean)	3.4	3.0	0.09
PFS (median months)	17.23	15.30	0.2
OS (median months)	37.40	30.60	0.5

POSTER 2

Patient attitudes toward opportunistic salpingectomy in non-gynecologic surgery

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Objective: To assess the interest women undergoing scheduled laparoscopic abdominal surgery for non-gynecologic indications have regarding opportunistic salpingectomy at the time of their procedure.

Methods: An IRB-approved survey of women undergoing common non-gynecologic abdominal surgeries was performed at a single institution to evaluate interest in opportunistic salpingectomy. Cases scheduled through a single provider's clinic for Cholecystectomy, Ventral Hernia Repair, and Gastric Weight Loss from January 7, 2020 to July 23, 2020 were eligible. Inclusion criteria was females age 18–75. Exclusion criteria were males and females age <18 or >75. Eligible patients seen and scheduled for surgery were provided a handout with information regarding ovarian cancer and opportunistic salpingectomy as part of their pre-op informational packet. Attempt to reach the patient within one week of their clinic visit was made and survey performed via phone if the patient was agreeable.

Survey data was reviewed and analyzed to determine interest for a program that offers opportunistic salpingectomy in this patient population.

Results: 40 cases met inclusion criteria. Three cases did not yield data due to inability to reach the patient or unwillingness to participate, leaving 37 completed surveys (92.5% completion rate).

Review of the data shows that 100% (37/37) women surveyed felt that the information offered to them in a one-page handout regarding ovarian cancer and opportunistic salpingectomy was sufficient to explain the process and reasoning, and felt it should be offered to all women undergoing elective abdominal surgery. Additionally 29/37 (78.4%) reported that they would not necessarily need an additional appointment to discuss the procedure if it was to be performed by a gynecologist.

When asked about their feelings regarding the procedure itself 25/37 (67.6%) women said they would absolutely want the procedure done if possible at their upcoming surgery, with an additional 6/37 (16.2%) reporting strong interest. Only 2/37 (5.4%) reported they would not be interested in the procedure if offered it with their upcoming procedure and cited interest in future childbearing as the reason.

Conclusion: When provided with information and asked about their preferences and desires the patients interviewed showed overwhelming interest in opportunistic salpingectomy. With studies showing the feasibility of this approach, and the potential to reduce ovarian cancer incidence by 20–30% or more, efforts should be made to introduce this as a procedural option.

Analysis regarding cost and physician scheduling is underway, and we may need to consider training of general surgeons in this procedure in order to achieve a viable model.

POSTER 3

History of pelvic radiation leading to placenta previa with placenta increta

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Objectives: To provide a detailed patient case report of placental abnormalities that developed secondary to pelvic radiation with a review of the literature to guide providers for better counseling of the risks of pregnancy following pelvic radiations.

Case: A 34 yo G4P2012 with a history of adulthood pelvic radiation secondary to rectal carcinoma presented with painless vaginal bleeding at 12w6d gestation resulting from a successful donor egg embryo transfer. She was subsequently diagnosed with a subchorionic hemorrhage, complete placenta previa with protrusion of the placenta into the cervix, and placenta increta. A multi-disciplinary team including maternal fetal medicine, neonatology, gynecology oncology, and anesthesia was assembled and the patient was counseled regarding maternal and fetal risks. After counseling, the decision was made for admission at 24w0d with inpatient management until delivery via cesarean hysterectomy. She presented at 22w5d with vaginal bleeding that was unable to be medically managed. Ultimately due to worsening vaginal bleeding, a gravid hysterectomy was performed at 23w0d.

Conclusion: History of pelvic radiation increases the risk of pregnancy complications including abnormal placentation, fetal growth restriction, preterm labor and delivery, risk of cesarean hysterectomy, and fetal and/or maternal death. If a patient has a history of receiving high dosages of pelvic radiation, providers should consider multidisciplinary

preconception counseling for patients considering pregnancy or reproductive assistance due to the high risk of possible uteroplacental complications from the long-term effects of pelvic radiation leading poor maternal and pregnancy outcomes.

POSTER 4

Mature uterine teratoma, a case report and review of literature

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Objectives: Extragonadal teratomas make up 1–2% of all teratomas, with teratomas involving the uterine corpus being even rarer. A review of the diagnosis and management of a case of a uterine teratoma observed at our academic hospital will contribute to the lack of literature regarding these tumors.

Case: We report at 49-year-old female who presented with menorrhagia with and negative endometrial biopsy. Initial ultrasound imaging was suggestive of a lipoleiomyoma. A CT obtained commented on a fat-containing mass within the uterus, also consistent with a lipoleiomyoma. She underwent a total abdominal hysterectomy with concurrent abdominal hernia repair from prior exploratory laparotomies secondary to perforated diverticulitis. Histological studies after surgery revealed a benign teratoma consisting of mature adipose tissue and hyaline cartilage, surrounded by myometrium, with overlying benign endometrium. Her postoperative course was uncomplicated.

A review of 25 case reports written on the topic of uterine or extragonadal teratomas was performed to compare diagnostic and management patterns for these types of tumors. The most common presenting symptoms include abnormal uterine bleeding, pelvic pain, dysuria or no symptoms at all. First line imaging modalities include ultrasound, while CT and MRI can better characterize features of possible extragonadal teratoma. However, per literature, and as in our case, no uterine teratoma has successfully been diagnosed preoperatively. A few case reports have noted recurrence of immature teratomas as well as extrauterine spread to structures such as the omentum. Therefore, for patients who do not desire future fertility, an *en bloc* hysterectomy would appear to be the preferred surgical approach to mitigate the risk of spread and incomplete resection possibly leading to a missed diagnosis. For women who desire future childbearing or who are poor surgical candidates, close monitoring for 3–5 years after hysteroscopic resection, polypectomy, or excision is reasonable.

Conclusions: While teratomas are the most common type of ovarian germ cell tumors, given rarity of cases of extragonadal teratomas, review of the diagnosis and management of our case of a uterine teratoma adds to the paucity of literature regarding management of these tumors.

POSTER 5

Criteria for resumption of assisted reproductive technology intervention after fertility-sparing treatment of atypical endometrial hyperplasia and endometrial cancer

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Objectives: To identify criteria for safe resumption of assisted reproductive technologies (ART) in women diagnosed with atypical endometrial hyperplasia (AH) or endometrial cancer (EC) during infertility evaluation and managed with a fertility-sparing approach.

Methods: A retrospective review was performed of women diagnosed with AH or EC during infertility workup at a multi-site academic tertiary care center between 1/1/2009 and 12/1/2018. The primary outcome was the number of benign endometrial samplings required by clinicians prior to resumption of ART. Secondary outcomes included recurrence rates, type and duration of treatment, and sampling modalities. Descriptive statistics were calculated.

Results: In this pragmatic sample, 22 women were treated for AH (55%) and EC (45%). Two failed medical management and proceeded with hysterectomy and five were lost to follow-up or deferred fertility. Fifteen women (68%) achieved pathologic response and were cleared to resume ART. Mean age of this subset was 34.8 (± 4.0) years with mean BMI 33.9 (± 10.6) kg/m^2. Uterine factor (60%) and ovulatory dysfunction (47%) were the two most common infertility diagnoses. Initial treatments included oral progestins (73%), levonorgestrel intrauterine devices (13%), or a combination of these two modalities (13%). Of these fifteen women, eleven (73%) were cleared for ART after one benign endometrial sampling ("one-sample") and four (27%) were cleared after two consecutive benign endometrial samplings performed three to four months apart ("two-sample"). In the one-sample group, D&C was used for sampling in 67% and EMB in 33%. In the two-sample group, only EMB was used. The average treatment duration was 6.3 vs. 10.9 months in the one- vs. two-sample subsets. One woman from each group underwent hysterectomy despite clearance. Four of the remaining ten women in the one-sample group (40%) experienced recurrence, compared to zero in the two-sample group. All recurrences were managed with resumption of progesterone-based treatment. One woman (25%) was cleared after one benign sampling and three (75%) after two.

Conclusion: Most gynecologic oncologists cleared patients to proceed with ART after a single endometrial sampling demonstrated pathologic response following progesterone-based treatment for AH/EC. Short interval recurrence was common, but with potential for salvage response.

POSTER 6

Salvage chemotherapy after treatment with immune checkpoint inhibitors in women with recurrent cervical cancer

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Objective: Immunotherapy may change the tumor microenvironment, increasing sensitivity to subsequent therapy and improving response. As such, the response to salvage chemotherapy after disease progression on immune checkpoint inhibitor (ICI) has been reported in several cancers, but its efficacy in cervical cancer is unknown. We aimed to describe response to salvage chemotherapy after progression on ICI in women with cervical cancer.

Methods: This is a single-center retrospective analysis of cervical cancer patients who received cytotoxic chemotherapy following treatment with ICI from January 2015 to August 2020. An EMR query was performed to identify cervical cancer patients treated with ICI, and chart review was performed to identify patients who received subsequent chemotherapy. Demographic and clinical data was abstracted, and descriptive statistics were performed. Outcome analysis was conducted on patients who received more than one cycle of salvage therapy.

Results: Seven patients who received salvage chemotherapy were identified. Median age at diagnosis was 35 years, and 5 patients were White, 1 Black, and 1 Other. Five had squamous cell carcinoma, one adenocarcinoma, and one melanoma of the cervix. At diagnosis, two (28.6%) had stage I disease, and five (71.4%) had stage III or IV disease. Patients received a median of two standard regimens prior to immunotherapy. Median time from diagnosis to ICI was 18.6 months. All women progressed on ICI after a median of three cycles. Overall response rate (ORR) to immunotherapy was 0%, and median progression free survival (PFS) was 56 days. Two patients received only 1 cycle of salvage chemotherapy and opted for hospice. Of the five who continued, median PFS was 122 days (4.1 months) after a median of six cycles. ORR was 40%, and clinical benefit rate was 60%.

Conclusion: To our knowledge, this is the first study of salvage chemotherapy after ICI in cervical cancer. Median PFS in this cohort is comparable, if not slightly longer, than historic PFS for third-line chemotherapy in recurrent cervical cancer (4.1 vs. 3.2 months). Further research is needed to further delineate the effect of ICI on subsequent chemotherapy response.

POSTER 7

Improving resident confidence in discussing goals of care

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Objectives: While OB/GYN as a specialty often deals with patients during happy times of life, opportunities do arise for the specialist to deliver bad news. A needs assessment was conducted for OB/GYN residents on delivering bad news, followed by an interactive web-based lecture. The primary objective was to determine resident comfort in delivering bad news before and after the intervention.

Methods: Residents completed a baseline survey assessing their previous education in delivering bad news and their current comfort level. A one-hour didactic session was conducted using an interactive web-based classroom. Another survey was then conducted regarding their level of comfort after the intervention. A 5-point Likert scale was used. Mann-Whitney U test was used to quantify the difference in comfort level before versus after the lecture.

Results: A statistically significant difference was found between residents' comfort level in delivering bad news before and after the lecture. Mean score was 4.4 vs 3.5 (*P*-value 0.03) for the question "How prepared do you feel to deliver serious news?". 100% of learners responded that they learned at least one practical skill they would apply in their practice.

Conclusions: One lecture on delivering bad news was found to improve resident confidence, despite 90% of residents reporting they had previously been taught to deliver bad news. This indicates this may be a skill in which residents require frequent practice to feel confident. Next steps include additional training including role-playing using a fishbowl model as well as practice with recorded standardized patients sessions.

POSTER 8

Docosahexaenoic acid demonstrates anti-tumorigenic effects in endometrial cancer

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Objectives: Obesity is associated with increased risk and mortality from endometrial cancer (EC). Omega-3 polyunsaturated fatty acids (PUFAs) may have activity against obesity-driven cancers; this has not been investigated in EC. We assessed the effect of omega-3 PUFAs on cell proliferation and tumor growth in endometroid EC cell lines and an $LKB1^{fl/fl}p53^{fl/fl}$ mouse model.

Methods: The EC cell lines ECC-1 and KLE were exposed to varying concentrations of docosahexaenoic acid (DHA), an omega-3 PUFA. Cell proliferation was assessed by MTT assay, apoptosis by Annexin V-FITC assay, and reactive oxygen species (ROS) by dichloro-dihydro-fluorescein diacetate (DCFH-DA) assay. Western immunoblotting was performed to assess trends in anti-apoptotic proteins BCL-2 and MCL-1 and cellular stress proteins PERK, Bip, and PDI.

$LKB1^{fl/fl}p53^{fl/fl}$ mice were fed either a low-fat (lean) or high-fat (obese) diet and then treated with placebo or DHA (15 mg/kg for 4 weeks, intraperitoneal). Immunohistochemistry (IHC) was performed on treated and untreated tumors to assess proliferation and apoptosis. Metabolomics identified the metabolic effects of DHA in the tumors.

Results: DHA caused dose-dependent inhibition of cell proliferation in both cell lines (ECC-1 IC50 of 60 μM; KLE IC50 of 35 μM). DHA increased expression of annexin V ($P < 0.05$) and decreased expression of BCL-2 and MCL-1. DHA increased ROS and induced PERK, Bip, and PDI expression in both cell lines.

Obese mice demonstrated an 81% tumor weight reduction while lean mice demonstrated a 64% tumor weight reduction ($P < 0.05$). There was no change in mouse weight with DHA treatment. IHC showed decreased Ki67 and increased BCL-XL expression in both groups with DHA treatment. Metabolomic profiling revealed that total monacyl-, diacyl- and triacyl-glycerols were increased with DHA treatment in both obese and lean mice, suggesting that lipids were diverted from membrane biosynthesis to energy storage. Differences were found in DHA's effect when comparing obese and lean mice, including (1) decreases in lipid biosynthesis and amino acid metabolism in obese mice, and (2) increases in fatty acid desaturase activity in lean mice.

Conclusions: DHA inhibits EC proliferation and tumor growth *in vitro* and *in vivo*. Omega-3 PUFAs may be a

promising dietary strategy for EC prevention and treatment.

POSTER 9

Primary endometrial yolk sac tumor in a post-menopausal woman: a case-report and review of literature

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Objectives: Yolk sac tumors (YSTs) are rare, highly malignant germ cell tumors, often with poor prognosis [1]. Extra-gonadal YSTs (EGYSTs) are even more rare, accounting for 10–15% of cases and are most often found in midline structures [2]. The description of primary endometrial YSTs in the literature is limited to case reports and two small case series. A standard approach to treatment has yet to be established due to the rarity of the disease. The aim of this study is to present a case of primary YST of the endometrium in a 72-year-old with a history of Diffuse Large B-cell Lymphoma (DLBCL) and review the literature on clinical presentation and management of EGYSTs.

Methods: Systematic literature search of PubMed, Scopus, Cochrane Library was performed using the search terms Yolk Sac Tumor [All Fields] OR Endodermal sinus tumor [All Fields] AND ("primary, endometrium") [MeSH Terms]. 51 citations were identified, of those 18 were found to report solely on patients with primary YST of the endometrium and were reviewed to summarize and discuss clinical features and treatment patterns.

Results: Only 29 Cases of primary endometrial YST were reported in the literature (Table 1). Here we describe a Stage I primary endometrial YST in a 72-year-old women with history of DLBCL who presented with vaginal bleeding and posed a diagnostic challenge. Following surgery, she completed 4 cycles of dose reduced cisplatin and etoposide and is currently without evidence of disease on imaging performed following completion of therapy.

Conclusions: EGYSTs, especially of the endometrium, are rare malignant germ cell tumors with a poor prognosis. Additionally, they present a diagnostic challenge and are often not suspected in the post-menopausal population. The presenting symptoms, histologic and immunohistochemical features of EGYSTs can overlap with the far more common carcinomas, contributing to the diagnostic challenge. Surgery followed by post-operative chemotherapy has been considered the most effective for treatment of primary endometrial YST. However, standard chemotherapy regimens and postoperative radiotherapy remains to be determined.

Table 1. Summary of features of published primary endometrial YSTs.

Case [Reference]	Age	Initial Symptoms	AFP	Primary Surgery	FIGO	Post-op path	SD body	Ovarian Mets	Chemo	Rads	Follow-up Time
1 [3]	24	Abd pain	3600[a]	CISH + BSO	IVA	Ret, Pap Eosinophilic hyaline bodies	Yes	Yes	VAC x6 cycles	Yes	DOD, 24
2 [4]	28	AVB, Abd pain	380	TAH + BSO	IB	Ret, So, Pap	Yes	No	VCR, VLB, CTX, ADR, MDX, 5-Fu, MPA	No	REC, 2; DOD, 8
3 [5]	42	AVB	18,530-7,100[a]	TAH + BSO	IA	Tub-pap, Ret, So	Rare	No	PVB x4 cycles	No	NED > 24
4 [6]	27	AVB	1,580	TAH + BST + OMT	IA	Ret	Yes	No	VAC	No	NED > 14
5 [7]	49	AVB	Normal	TAH + BSO + PLND	IA	Tub-pap, So	Yes	No	No	Yes	NED > 28
6 [8]	59	Abd pain	25,385	TAH + BSO + OMT + PLND	NA	Pap	Yes	NA	BEP x4 cycles + EP x2 cycles	No	REC, 16; AWD > 16
7 [9]	65	AVD	2,306	Modified RH + BSP + PLND	IIIC	Bld-pap, So, hyaline globules	Yes	No	TP x5 cycles	No	NA
8 [10]	64	Abd distension	15,918	NA	IVB	Ret, Gld, Pap	Rare	NA	NA	No	DOD, 2.5
9 [11]	30	AVB	1,762-759.5[a]	TAH *(OP)*	II	Ret, So	Yes	NA	BEP x3 cycles	No	NED > 72
10 [12]	57	Abd pain	29,214	TAH + BSO + OMT + PNLD + PALND	IVB	Tub-pap, So	Yes	Yes	BEP x2 cycles	No	DOD < 2

11 [12]	44	AVB	27,522	TH + BSO + OMT + PLND + PALND	IB	Ret, So myxomatous changes	Yes	NA	BEP x3 cycles	No	NED > 6
12 [13]	29	AVB	3,593.4	Modified hysterectomy + left adnexa + PLND + PALND	II	NA	Yes	No	BEP x4 cycles (P=carboplatin)	No	NED > 39
13 [14]	28	AVB	1,522[b]	TAH + BSO + OMT + PLND + appendectomy + partial resection of the sigmoid colon with anastamosis	IV	NA	NA	No	PTX, ADM, CDDP, CBDCA, MTX, Act-D, VP-16, BLM, pingyangmycin, VCR, FUDR, oxaliplatin, CPA	No	WED, 10
14 [15]	31	AVB	222	TAH + BSO + OMT + PLND + PALND	IA	Similar to gonadal YST	NA	No	BEP x4 cycles	No	NED > 24
15 [16]	63	AVB	NA	TAH + LSO + OMT + appendectomy	IVB	Pap, Gld	NA	Yes	BEP x3 cycles	No	NED, 6
16 [17]	71	NA	NA	YES	IIIA	Ret, Pap	No	NA	NA	No	DOD, 19
17 [17]	55	NA	NA	YES	II	So, Ret, Pap	Rare	NA	NA	Yes	DOD, 16

18 [17]	59	NA	NA	NA	IB	Gld, So	No	NA	NA	NA	LTF
19 [17]	68	NA	NA	YES	IV	Gld, So, Pap	Rare	NA	NA	No	DOD, 14
20 [17]	77	NA	NA	NA	IIIC	Gld, So	No	NA	NA	NA	LTF
21 [17]	64	NA	NA	YES	IIIA	Hep, So, Gld	No	NA	NA	Yes	DOD, 23
22 [17]	87	NA	NA	YES	II	Ret, So	No	NA	NA	No	AWD, 7
23 [17]	61	NA	NA	YES	IA	Gld	No	NA	NA	No	AWD, 8
24 [17]	63	NA	NA	YES	IIIC	Gld, Pap, Ret	No	NA	NA	Yes	NED, 5
25 [17]	62	NA	NA	YES	IB	Pap	No	NA	NA	No	AWD, 30
26 [17]	77	NA	NA	YES	IIIC	Gld	No	NA	NA	No	AWD, 17
27 [18]	38	AVB	Normal	TLH + BSO + PLND + PALND + OMT + appendectomy	IVB	So	NA	No	BEP x6 cycles	No	NED 24 mo
28 [19]	68	AVB	133[a]	TAH + BSO + PLND + PALND + OMT	II	Ret, So	Yes	No	BEP x6 cycles	No	NED 6 mo
29 [20]	27	AVB	800	TAH + BS + PLND + PALND *(OP)*	IA	So	Yes	No	DTX + CBDCA x6 cycles	No	NED 14 mo

abdominal; AVB, abnormal vaginal bleeding; AVD, abnormal vaginal discharge; AWD, alive with disease; BSO, bilateral salpingo-oophorectomy; CISH, classical intrafascial supracervical hysterectomy; DOD, died of disease; Gld, glandular; Hep, hepatoid; LTF, lost to follow-up; NA, not available; NED, no evidence of disease; OMT, omentectomy; OP, ovarian preservation; PALND, para-aortic lymph node dissection; Pap, papillary; PLND, pelvic lymph node dissection; Ret, microcystic/reticular; RH, radical hysterectomy; Schiller-Duval bodies; SD body; So, solid; TAH, total abdominal hysterectomy; Tub, tubular.

[a] post operative AFP level. [b] AFP level after 1st round of chemotherapy.

POSTER 10

Low-risk Multivariate Index Assay scores, physician referral and surgical choices in women with adnexal masses

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Objective: To assess the use of Multivariate Index Assay (MIA OVA1) by gynecologists and determine referral practices and surgical decision making for women with adnexal masses and low risk MIA OVA1 scores.

Research design and methods: Information on patients who received an OVA1 test was collected retrospectively from 22 gynecologic practices through a chart review. Referral patterns were examined for patients with low-risk OVA1 results prior to first surgical intervention. Chart reviews were from a variety of practice and hospital settings representing major geographic regions within the United States.

Results: A total of 282 independent patient charts were reviewed. Low risk results were found for 146 patients (52%). Surgery was performed on 82 (56%) patients with low risk scores. The referral rate to specialty care was 21% (17/82) for low risk OVA1 patients. Three low- malignant potential tumors were identified in the low-risk patients, with no cases of invasive malignancy. Eighty-six percent of the surgeries performed on low-risk OVA1 patients were minimally invasive. In 44% of the low-risk OVA1 patients, no surgical intervention was performed.

Conclusions: A high proportion of low-risk OVA1 patients were not referred to a gynecologic oncologist prior to surgery, indicating gynecologists may use MIA OVA1 along with clinical and radiographic findings to appropriately retain patients for their care. This practice is safe and may be cost saving, with patient satisfaction implications.

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